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The Goat Island Rockshelter: New Light From Old Legacies (Introduction)

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THE GOAT ISLAND ROCKSHELTER: NEW LIGHT FROM OLD LEGACIES

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by

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DEDICATION

This thesis is dedicated to the memory of Mary Butler Lewis.

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ABSTRACT

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Major syntheses of Hudson Valley prehistory have ignored archaeological sites located and tested by Dr. Mary Butler as part of the Hudson Valley Archaeological Survey (1939-1940). Since many of the sites were multicomponent and unstratified, investigators believed they could provide little new information on culture history in the region.

A careful evaluation of one of the 45 sites investigated by the Survey, the Goat Island Rockshelter, in Dutchess County, New York, demonstrates the potential contribution to knowledge offered by previously excavated collections. A detailed materials analysis (including a prehistoric ceramic attribute analysis), and the original field notes and drawings, support the hypothesis of the presence of the Early-Middle Woodland Bushkill complex in the Hudson Valley. The ceramic remains pose other interesting challenges to current understanding of Hudson Valley prehistory.

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CHAPTER 1

SETTING THE STAGE

Introduction

> We are the archaeologists
> And we want you to know
> We only sink our mattocks
> Where the poison ivies grow.
>
> [first verse of the Hudson Valley Archaeological Survey song written by Larry Flewelling, 1939, in Butler (n.d.)].

Although much is known about the prehistory of the Hudson Valley in New York State from the prolific work of notable scholars (e.g. Eisenberg 1974, 1978, 1984, 1989, n.d.; Funk 1965, 1976, 1978, 1989; Ritchie 1958), archaeological research in the region is, indeed, "still in its infancy" (Funk 1976:1). This situation is attributed to the lack of adequate archaeological data for the region as compared to central and western New York. This paucity may be due to post-contact settlement and development, careless amateur digging (Funk 1976:1) or "the prevailing small size and meager content of the Indian sites" (Ritchie 1958:7). This last comment by Ritchie, if indeed true, needs to be examined with an eye towards understanding the archaeological implications of prehistoric cultural differences between central and western New York on the one hand, and eastern New York on the other (i.e., Iroquois versus Algonquian settlement pattern and site densities).

Much of the rich archaeological remains of New York's Hudson Valley lie unstudied in cigar boxes, closets, and on dusty museum shelves. An example of just such an untapped resource are the 45 sites investigated by Dr. Mary Butler as part of her Hudson Valley Archaeological Survey conducted from Vassar College in 1939-1940. The project was cut short by the inception of World War II. Therefore, these sites have never been thoroughly analyzed, nor have the results been published. During the survey, Dr. Butler corresponded frequently with William A. Ritchie, the New York State Archaeologist from 1949 to 1971 (letters on file at the New York State Museum). She struggled to have her work added to the knowledge of New York State archaeology. Yet, Ritchie failed to include her survey results in his work (see Ritchie 1944, 1958, 1969). He felt that many of her sites were either disturbed or "culturally unassignable", as indicated by his letters to her.

Dr. Robert Funk, Ritchie's successor as State Archaeologist, did not incorporate the Butler material into his synthesis of Hudson Valley prehistory (Funk 1976). He felt that many of the sites had poor documentation and were too disturbed to add much to our knowledge of culture history (Robert E. Funk, personal communication 1988).

In this thesis I analyze the archaeological remains recovered in 1939 by Dr. Butler's crew from the Goat Island Rockshelter in Dutchess County, New York. I "discovered"

the materials from the site at the New York State Museum, while working on an inventory of the archaeological collections, under Dr. Lynne Sullivan. The collection was loaned to me for the purpose of this study and was stored at the University of Massachusetts, Amherst, for the duration of this project. My initial interest in the site was twofold: (1) I wanted to determine the sequence of occupation of the site, and (2) I wanted to see if "old" collections could contribute to archaeological knowledge in the present. Within this second category, I also wanted to understand why the Butler collections had been ignored.

The Goat Island Rockshelter site is multicomponent and contains both prehistoric and historic remains. The examination of this collection shows that analyses of Butler's collections can indeed contribute to our knowledge of culture history. I suggest the presence of an Early to Middle Woodland Bushkill complex in the Hudson Valley as defined by Kinsey (1972). This complex has not often been identified for the Hudson Valley (cf. Vargo and Vargo 1986). The identification of this complex in the Hudson Valley accomplishes two goals: (1) it fills in a gap in our understanding of the culture history of the Hudson Valley (Funk [1989] identifies a "hiatus" in the region for this part of the chronology), and (2) it shows the importance of analyzing previously excavated collections, and understanding the reasons they may have been ignored in the

past. Questions may be asked of "old" data that were unknown to the excavators.

Analysis of the artifactual materials, faunal remains, field notes and drawings achieved these goals. I describe the sequence of occupation of the site, and assess the integrity of the site and the quality of fieldwork conducted by Butler's crew.

Site Description and Location

The Goat Island rockshelter is located in northern Dutchess County, New York, about three miles from the Columbia County border (Figure 1). On recent maps the island is referred to as Magdalen Island. However, the larger island just to the south, today called Cruger Island, was originally called Magdalen Island (the history of these name changes will be discussed in Chapter 2). To avoid confusion, and to be consistent with the name of the archaeological site, I refer to the island as Goat Island throughout this thesis.

Hudson Valley Archaeological Survey

The Goat Island rockshelter site was first investigated by professional archaeologists in the summer of 1939 by Dr. Mary Butler as part of her Hudson Valley Archaeological Survey. The survey was funded by a five-year grant to the Division of Anthropology at Vassar College, Poughkeepsie, New York, from the Carnegie Corporation in Pennsylvania. Dr. Henry MacCracken, president of Vassar College at the

time, had a serious interest in local history and promoted the project as an outlet for community activity and interest. As stated in numerous press releases, in conducting the Survey, Butler sought to expand knowledge of Hudson Valley prehistory.

Dr. Butler was known for her contributions to the archaeology of Mesoamerica and the northeastern United States (Keur 1971:255). She received a B.A. from Vassar in 1925, an M.A. from Radcliffe in 1930 and a Ph.D. from the University of Pennsylvania in 1936 (Williams 1989:3). She was among the first six women to receive a Ph.D. in Americanist Archaeology (Levine 1987:14). Butler died in 1970 (Keur 1971).

Prior to the Hudson Valley Archaeological Survey, Dr. Butler's fieldwork experience in the eastern United States had been in West Virginia, Illinois and Pennsylvania (Keur 1971:255). Therefore, coming into an area that was unfamiliar to her, she relied heavily on the knowledge of local collectors in locating archaeological sites (Williams 1989:7). Her field crew consisted of Vassar College students, local high school students, avocational and, occasionally, other professional archaeologists (e.g., Carlyle Smith, then a graduate student at Columbia University, was her assistant in the summer of 1940) (Figure 2).

Between 1939 and 1940 the crew located and tested forty-five sites in Dutchess, Westchester, Orange, Columbia, Greene and Albany Counties (Figure 3). Due to intense media attention, many people applied to work on the survey (e.g., Marian E. White). However, Dr. Butler was unable to employ most of these people, since funding for the project was cut short in 1941 with the inception of World War II. As a result, Dr. Butler was forced to cease fieldwork and was never able to fully analyze or publish her findings.

In 1950, a year after Ritchie became the State Archaeologist, the collections and documentation from the Hudson Valley Archaeological Survey were transferred from Vassar College to the New York State Museum in Albany. The reason for this transfer is unknown (Edward V. Curtin, personal communication 1991). Some of the collections were loaned over the years to various researchers, which may explain the large number of missing artifacts (Williams [1989] contains a complete inventory). Final reports have not been published for any of the sites. Dr. Butler published a short summary of her fieldwork in the Vassar College Alumnae Magazine (Butler 1940). She also presented general results of the Survey at an Eastern States Archaeological Federation meeting at the New Jersey State Museum in Trenton, November 9, 1940. Since this presentation was not written down in its entirety, most of the information to be gleaned today concerning the survey is

in the letters, news clippings and notes on file at the New York State Museum.

Excavation of the Goat Island Rockshelter

Goat Island, or Magdalen Island, lies approximately 2,500 feet off the east shore of the Hudson River in the township of Redhook. The island is approximately 1/4 mile long and 200 feet wide. Three archaeological sites were investigated on the island in the summer of 1939: Goat Island rockshelter, Goat Island Shell Heap and Goat Island Campsite (Figure 4). I address only the rockshelter here, with brief mention of the other two sites.

The rockshelter runs north-south along the west side of the island. It is about 45' in length and 5-10' wide (Figure 5 and 6). It provides adequate shelter from heavy wind and rain for six to ten adults, as I was able to experience personally.

The site was excavated completely by the Hudson Valley Archaeological Survey crew in three days, from August 17 to 19, 1939. Apparently, the site was excavated by shovel and mattock (Figure 7), with the soil being screened through 1/4" mesh, judging from the size of the small fish bones recovered (the field notes indicate that the soil was "sieved"). Provenience of artifacts was generally recorded within five-foot excavation squares (Figure 8). Artifacts were given field catalog numbers in the field and selected lithic artifacts were drawn. This field catalog was later

converted into an arbitrary cataloging system. Four pages of very general, hand written field notes were taken; they were not much help in reconstructing the excavation of the site; the detailed catalog and field drawings proved to be the most valuable for this purpose.

Butler's field methods were fairly meticulous for the time. Recording artifacts within five foot excavation squares appears to be a methodology she brought with her from the Midwest. Ritchie at this time was more inclined to dig long trenches (sometimes hundreds of feet long) to get at stratigraphy, and was less concerned with horizontal provenience (see Ritchie 1932, 1940). Although Butler's own field methods were meticulous, she apparently had difficulty controlling the over-zealous amateur archaeologist helpers at times (as indicated by her letters to Ritchie).

According to the field notes she recognized two major soil levels at the rockshelter: (1) Level 1 - black humus with ash and charcoal, from the surface down to 6-9 inches below the surface, and (2) Level 2 - yellow sandy subsoil, which started below Stratum 1 and continued to a maximum depth of 30 inches (Figure 9).

Five cultural features were encountered: an ash pit (Feature 1), two burned areas (called "fire pits" - Features 2 and 3), a postmold (within Feature 3), and a prehistoric human burial (these are described in detail in Chapter 4).

Plan views and profiles were drawn of the rockshelter and associated features (Figure 7 5-8).

The excavators noted extensive looting of the nearby Goat Island campsite. The field notes indicate that pot-hunters were likely looking for "Captain Kidd's treasure," a pastime that has plagued the Northeast for three centuries. Today, the entire island continues to be looted ravenously, causing extreme soil erosion, damaging both the archaeological record and the environment. The sites on the island attract looters because of their abundant supply of desirable artifacts; one collector alone recovered more than five hundred projectile points from the island (Bethia Waterman, personal communication 1990).

Environmental Setting

From various points on the island, one is allowed magnificent views up and down the Hudson River and of the majestic Catskill Mountains to the west (Figure 10). The island is located near the mouths of several streams, creeks and an abundant marshland.

Geology

The Hudson River Valley, generally oriented north-south, forms a 10- to 20-mile wide lowland lying between the Helderberg Escarpment and Catskills on the west and the Taconic Mountains on the east (Thompson 1966:29). South of Albany, the valley is underlain by folded meta-sedimentary rocks, a northern extension of the Ridge and Valley Province

occurring in Pennsylvania and southward (Thompson 1966:29) (Figure 11). Farther to the south, near West Point, the river crosses a ridge of more highly metamorphosed rocks that form the Hudson River Highlands and the Reading Prong (Hunt 1974:280). Within the Hudson Lowland many areas are covered by glacial drift; a proglacial lake that extended from Kingston to Glens Falls, known as Lake Albany, left behind extensive sand and clay deposits (Funk 1976:5). Lake Albany occupied the area 12,600-15,000 years ago (Carey and Waines 1986:VIII-13), prior to any known human settlement.

Topography along the river's edge is quite variable; in the vicinity of Goat Island the shores are principally steep slopes attaining various heights, interrupted by brook-created hollows, mouths of major streams, low terraces, rocky islands and peninsulas (Curtin and Bender 1990:14). This combination of floodplain development, riverine wildlife habitats, associated bluff systems and surrounding upland environments would have made this area of the Hudson a varied and resource-rich landscape for prehistoric populations -- one that would have been distinct from other regions (Curtin and Bender 1990:14).

The bedrock geology of Goat Island is Ordovician Austin Glen Formation graywacke and shale (Fischer et al. 1970). The island is quite rocky, especially along the western edge in the vicinity of the rockshelter. Soil cover in the area is primarily of glacial origin: till, outwash and lacustrine

stratified clay deposits (Figure 12; Carey and Waines 1986:VIII-17). Although no coring has been done on Goat Island, according to the Dutchess County Soil Survey the bedrock is partially overlain by a thin layer of glacial till (Carey and Waines 1986:VIII-19), and thin, recent alluvial deposits (Cadwell and Dineen 1987).

Hydrology and Geomorphology

The Hudson River originates at Lake Tear of the Clouds in the Adirondack Mountains. For the southern 150 of the Hudson River's 300 miles, it is an estuary of the Atlantic Ocean; from Troy south to the New York Harbor, the river is below sea level (Funk 1976:6) and is underlain, in places, by several hundred feet of fill (Hunt 1974:286).

Tides in the area of Goat Island have a range of about three to five feet (Christopher Lindner, personal communication 1990). Therefore, the main "river" flows in different directions at different times, with about 6 1/4 hours between low and high tides (Kiviat 1987:5). The mid-Hudson estuary behaves like a brackish lake, being rocked back and forth by the tide (Eisenbud 1969:15). Saline water is rarely found north of Poughkeepsie, about twenty miles to the south of Goat Island (Curtin and Bender 1990:19).

Goat Island is located at the north end of the North Bay of the Tivoli Bays -- shallow "overflow" areas of the Hudson east of the modern railroad embankment (Kiviat 1987:7). The main channel to the west of Goat Island is 47

feet deep, whereas the marshland to the east (Tivoli North Bay) is often dry at extreme low tide (Kiviat 1987:7). This shallow area to the east may be a result of recent accelerated siltation in the North Bay due to the construction of the railroad embankment after 1851, and accelerated soil erosion (due to historic development) from the nearby Stony Creek (Bethia Waterman, personal communication 1990).

On the other hand, parts of the shallows to the east of Goat Island may have been dry land prehistorically. World-wide sea level has risen considerably since the Pleistocene (Bloom and Stuiver 1963). Along New England's south shore the sea level rose 3 meters per 1000 years between 8000 and 2500 years before present (henceforth abbreviated as B.P.) and 1 meter per 1000 years from then until the present (Oldale 1986:96). For the Hudson Basin, Salwen (1965:33) also noted that during the past 3000 years sea level has continued to rise at a rate of about 1 meter per thousand years. During the period of significantly lower sea level the Hudson River was a true fjord (glacially scoured submarine landform) -- the only fjord to have ever existed on the Atlantic coast of the United States (Brennan 1974:82).

Archaeological evidence seems to confirm the hypothesis of rising water levels in the Hudson estuary -- at least in some areas. Funk's investigations at the Shagabak site

(1976) show that settlement from Middle Woodland times (ca. 2,500-1,200 B.P.) lies a mere 18 inches above present high tide; Late Archaic components (ca. 3-6000 B.P.) lie below present water levels. Eisenberg (1982) suggests that the Esopus Meadows, another extensive shallows near Kingston, was above water in the historic period; aerial photographs show submerged Euro-American stone fences, indicating a rise in water level of several feet. However, this may in part be due to a change in the discharge of the Esopus River, or other factors aside from rising sea-level.

Despite the dry land connecting Goat Island to the mainland at low tide, it is unlikely that it was a peninsula in prehistoric times. Due to the aforementioned silt accumulation in the North Bay, the shallow areas to the east of the island may be an artifact of recent geomorphological processes. Soil cores have shown that the North Bay consists of 25' of organic silt, 40' of glacial silty clay, 6' glacial sand, and then bedrock (Carey and Waines 1986:VIII-14). It is possible that the area to the east of Goat Island was a channel at one point, perhaps before the last glaciation. Smith (1980:175) indicates that the North Bay was at one time very deep and has filled in as a result of the subsidence of clay banks around it. He describes three acres of land on North Bay subsiding more than eighty feet within a twenty-five year period into "a bed of semi-liquid blue clay". Thus, although sedimentation likely

increased during the historic period, due to accelerated soil erosion from land clearing and construction, the precise rates of sedimentation are unknown (Carey and Waines 1986).

Fauna

The Bays are animal havens with a great variety and abundance of wildlife (Kiviat 1987:8). Thus, the associated marshes were likely favored locations for relatively large spring and summer prehistoric sites (Salwen 1975:53).

The Hudson River is a migration route for numerous species of birds, especially marsh and water birds (Kiviat 1987:6). Canada Geese and a variety of ducks come to the Hudson Valley during the spring and fall and often spend part of the winter on the river (Curtin and Bender 1990:26). Blue heron have their breeding grounds on the Hudson during the spring and summer, as did the now extinct passenger pigeons (Curtin and Bender 1990:26).

About 65 different species of fish have been found in the area - from the deep water to the marshes (Kiviat 1987:6). Most of the migratory fish that use the Hudson River today are anadromous species, salt-water fish that spawn in the river (Clark and Smith 1969:293). These include two species of sturgeon, three species of herring, smelt, lamprey and striped bass (Curtin and Bender 1990:28). Once abundant, shad had greatly diminished by the 19th century due to over-fishing, pollution, dredging and dam

construction (Eisenbud 1969:12). Likewise, Atlantic sturgeon and short-nosed sturgeon are currently listed by the Department of the Interior as "rare" and "endangered", respectively (Clark and Smith 1969:297). Three-hundred pound sturgeon were recorded as late as 1855 (Eisenbud 1969:11).

Other fish in the Hudson estuary include eel, sunfish, bullhead, perch, bass and others. A number of reptiles are attracted to the shallow waters of the river and bays to feed on the abundant small fish there (Kiviat 1987:7). Also abundant are several species of mollusk. However, since the Hudson estuary has not remained stable in terms of sea-level, salinity and temperature, it is likely that the availability of various fish, reptile and shellfish species also varied throughout prehistory. Precisely how they varied remains unknown. F. Peter Rose, a graduate student at Bard College, has recently submitted a proposal to the Hudson River Foundation to study the paleoecology of the Tivoli Bays, with respect to prehistoric fish exploitation. His project is an important part of present research at Bard College on the paleoenvironment and prehistoric adaptations in the Tivoli Bays, conducted by Dr. Christopher Lindner and Bethia Waterman (1991), among others.

Larger animals in the area include white-tailed deer, squirrels, muskrats, eastern cottontails, raccoons, skunks, possums, and red and gray foxes (Kiviat 1987:22). White-

tailed deer were probably the single most important animals to the Eastern Woodland Indians after about 9000 years B.P. (Curtin and Bender 1990:27). Although deer congregate at certain times of the year (fall and winter), there is evidence that deer hunting was practiced rather continuously throughout the year (Curtin and Bender 1990:27).

Flora

In terms of vegetation, there is evidence from fossil pollen deposits in the Hudson River that the last seven thousand years saw an abundance of oaks with somewhat less pine, chestnut, birch, hickory, hemlock and maple along its shores (Kiviat 1987:13). Tivoli North Bay is today a fresh water tidal marsh with extensive stands of cattail, purple loosestrife, spatterdock, arrow arum and other herbs tolerant of flooding and oxygen-poor soils (Kiviat 1987:16). Types of vegetable foods exploited by Native Americans in the area likely included acorns and other nuts, berries, and wild seeds, such as chenopods, amaranths, polygonum (Curtin and Bender 1990:31), and cattail roots and florets. Cultigens such as corn, beans and squash were historically important in the Hudson Valley; however, the exact time of arrival is unknown (Curtin and Bender 1990:31).

All of the above fauna and flora would have been available at different times of the year (Figure 13), affecting prehistoric settlement patterns greatly. Larger scale environmental and cultural changes likewise had a

profound effect on site selection in the region. Therefore, before a discussion of the sequence of occupation at the Goat Island Rockshelter, a review of the prehistory and history of the region is necessary, which is the topic of the next chapter.